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UTILITY PATENT APPLICATION TRANSMITTAL
(Large Entity)*(Only for new nonprovisional applications under 37 CFR 1.53(b))*Docket No.
6065/79184Total Pages in this Submission
3**TO THE COMMISSIONER FOR PATENTS**Box Patent Application
Washington, D.C. 20231

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for an invention entitled:

Method and Apparatus for Allocating Resources of a Contact Center

and invented by:

Nayel Saleh

1cc62 U.S. PRO
09/637969
08/11/00If a **CONTINUATION APPLICATION**, check appropriate box and supply the requisite information:☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____

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Enclosed are:

Application Elements

1. ☒ Filing fee as calculated and transmitted as described below
2. ☒ Specification having 20 pages and including the following:
 - a. ☒ Descriptive Title of the Invention
 - b. ☐ Cross References to Related Applications *(if applicable)*
 - c. ☐ Statement Regarding Federally-sponsored Research/Development *(if applicable)*
 - d. ☐ Reference to Microfiche Appendix *(if applicable)*
 - e. ☒ Background of the Invention
 - f. ☐ Brief Summary of the Invention
 - g. ☒ Brief Description of the Drawings *(if drawings filed)*
 - h. ☒ Detailed Description
 - i. ☒ Claim(s) as Classified Below
 - j. ☒ Abstract of the Disclosure

UTILITY PATENT APPLICATION TRANSMITTAL (Large Entity)

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Application Elements (Continued)

3. ☒ Drawing(s) (when necessary as prescribed by 35 USC 113)
- a. ☒ Formal Number of Sheets 3
- b. ☐ Informal Number of Sheets _____
4. ☒ Oath or Declaration
- a. ☒ Newly executed (original or copy) ☐ Unexecuted
- b. ☐ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional application only)
- c. ☒ With Power of Attorney ☐ Without Power of Attorney
- d. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application,
see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation By Reference (usable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. ☐ Computer Program in Microfiche (Appendix)
7. ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all must be included)
- a. ☐ Paper Copy
- b. ☐ Computer Readable Copy (identical to computer copy)
- c. ☐ Statement Verifying Identical Paper and Computer Readable Copy

Accompanying Application Parts

8. ☒ Assignment Papers (cover sheet & document(s))
9. ☐ 37 CFR 3.73(B) Statement (when there is an assignee)
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure Statement/PTO-1449 ☐ Copies of IDS Citations
12. ☐ Preliminary Amendment
13. ☒ Acknowledgment postcard
14. ☒ Certificate of Mailing
- ☐ First Class ☒ Express Mail (Specify Label No.): EL432088319US

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Accompanying Application Parts (Continued)

15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)

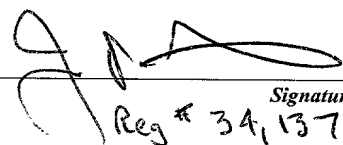
16. ☐ Additional Enclosures (please identify below):

Fee Calculation and Transmittal

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	37	- 20 =	17	x \$18.00	\$306.00
Indep. Claims	3	- 3 =	0	x \$78.00	\$0.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
BASIC FEE					\$690.00
OTHER FEE (specify purpose) _____					\$0.00
TOTAL FILING FEE					\$996.00

- ☐ A check in the amount of _____ to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. 03-2470 as described below. A duplicate copy of this sheet is enclosed.
- ☒ Charge the amount of \$996.00 as filing fee.
- ☒ Credit any overpayment.
- ☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).


Signature
Reg # 34,137

Dated: August 11, 2000

cc:

METHOD AND APPARATUS FOR ALLOCATING
RESOURCES OF A CONTACT CENTER

BACKGROUND

The invention relates generally to contact centers and, more particularly, to
5 allocation of resources, such as staff and communication channels, of a contact center.

A contact center (for example, a telephone call center of the type commonly used
for telemarketing) typically employs a number of agents who service customers of the
contact center using a number of communication channels or transport mechanisms,
which may be of a single type or of varying types. Examples of such transport
10 mechanisms include the public switched telephone network (PSTN) and associated
telephone trunk lines, the Internet and other packet-transfer connections, cellular
telephone systems, satellite communication systems, cable communication systems, *etc.*
Additionally or alternatively, a contact center may employ non-audio transport
mechanisms, for example, facsimile or electronic mail transmission. No matter what
15 transport mechanism(s) may be employed by a contact center, the success of a contact
center enterprise generally depends upon the efficient allocation of the resources of the
contact center, such as contact-center agents and communication channels or transport
mechanisms.

Previously, responsibility for maintaining the efficient allocation of resources
20 within a contact center was borne, for the most part, by the administrator of the contact
center. For example, in the past, a contact-center administrator would gather and evaluate
historical data relevant to earlier operation of the contact center and make decisions as to
whether and how to re-allocate contact center resources to improve the efficiency of the

contact center. The decision of the contact center administrator then had to be implemented, usually manually, inevitably resulting in a sub-optimal allocation of contact-center resources, as well as resulting in a substantial burden being placed on the contact-center administrator. Further, because the contact center operates substantially continually, any loss of efficiency in contact-center operation would continue, under this prior, manual approach to allocating resources until the contact-center administrator had time to gather and assess the relevant information and implement any necessary re-allocation of resources.

The invention generally relates to a novel method and apparatus for allocating resources of a contact center in a way that alleviates some of the foregoing problems with prior resource allocation techniques. In one embodiment, an "intelligent agent" may be used to monitor one or more operational parameters indicative of contact center performance, compare the monitored operational parameters with corresponding threshold values, and develop, based on the comparison, an indication of an action to be taken to affect the allocation of the resources of the contact center.

In one exemplary embodiment of the invention illustrated herein, resources of a contact center are allocated by a method in which at least one operational parameter of the contact center is electronically monitored, a comparison is performed between the operational parameter and a threshold value for the operational parameter, and an indication of an action to be taken to affect allocation of resources of the contact center is developed based on the comparison. Optionally, these steps may be repeated to provide for continual monitoring of contact-center performance.

Also, in some embodiments, the indication of an action to be taken may be provided to an administrator of the contact center. Further, the action to be taken may include, for example, transferring an agent from a first agent group of the contact center (such as an agent group with excess capacity, for example) to a second agent group of the contact center (such as an agent group operating at a service level below a desired threshold service level).

Some embodiments of the method of the present invention also may include the steps of acquiring at least one parameter to be monitored, acquiring a threshold value for the monitored parameter(s), and acquiring an action to be taken based on the comparison.

The invention also may be embodied in an apparatus for allocating resources of a contact center. Some embodiments of such an apparatus may include a processing unit

coupled with a storage device wherein a first set of instructions is storable in the storage device and executable by the processing unit for monitoring at least one operational parameter of the contact center. A second set of instructions, storable in the storage device and executable by the processing unit, provides for performing a comparison
5 between the operational parameter and a threshold value for the operational parameter. A third set of instructions, storable in the storage device and executable by the processing unit, provides for developing, based on the comparison, an indication of an action to be taken to affect allocation of resources of the contact center.

DESCRIPTION OF THE DRAWINGS

10 **FIG. 1** is a block diagram of an exemplary embodiment of a contact center environment in which the method and apparatus of the invention may advantageously be used;

FIG. 2 is a flowchart illustrating one exemplary embodiment of programming for configuring an intelligent agent in accordance with the principles of the present invention;
15 and

FIG. 3 is a flowchart illustrating one exemplary embodiment of programming for implementation of the method and apparatus of the present invention.

DETAILED DESCRIPTION

FIG. 1 illustrates, in block-diagram form, an exemplary embodiment of a contact
20 center 10 in connection with which the resource allocation method and apparatus of the present invention may be used. As shown in **FIG. 1**, the contact center 10 includes a multiport switch 12, which has an associated memory 14, a central processing unit (CPU)

16, and a data interface 18 coupled for bi-directional communication with the CPU 16 (as indicated by the bi-directional arrow shown interconnecting the CPU 16 and the data interface 18 in **FIG. 1**). The multiport switch 12 may be a telephony switch, such as an automatic call distributor (ACD), for example, an e-mail switch, a multi-media switch, or any other type of dedicated or hybrid data processing system. One or more agent terminals 20 also communicate bidirectionally with the multiport switch 12 via the data interface 18 and also with one or more agent contact units 22. Bi-directional communication is also provided between the agent contact unit(s) 22 and the multiport switch 12. Similarly, an external contact network 24 communicates bidirectionally with the multiport switch 12, and a plurality of external contact units 26, in turn, communicate bidirectionally with the external contact network 24.

A contact-center agent employed by the enterprise operating the contact center 10 is assigned to each agent terminal 20 and an associated agent contact unit 22. The assigned contact-center agent uses the agent terminal 20 and agent contact unit 22 to interact with customers on external contact units 26 via the multiport switch 12. A supervisor computer 28 is bidirectionally coupled to the data interface 18 so that a contact-center administrator or supervisor of the contact-center agents can receive data from the multiport switch 12 in order to oversee and monitor the performance of the contact-center agents during agent-customer interaction, and so that the contact center administrator or supervisor can attend to administrative functions of the contact center 10. An optional printer 30 is coupled to the supervisor computer terminal 28 to enable a contact-center supervisor or administrator to generate hardcopy reports relating to contact-center operation, for example.

An exemplary embodiment of an intelligent agent platform 32 (such as a stand-alone microcomputer, for example having a memory 34 and a CPU 36 associated therewith) may also be bidirectionally coupled with the data interface 18 so that it can exchange data and control information with the CPU 16 of the multiport switch 12. Of course, the intelligent agent platform 32 may be embodied in any suitable computer hardware, software, or firmware in addition to, or instead of, a stand-alone microcomputer.

FIGS. 2 and 3, respectively, depict high level flowcharts illustrating one exemplary embodiment of programming associated with the configuration (**FIG. 2**) and the operation (**FIG. 3**) of one exemplary embodiment of the intelligent agent. It should be understood that functionality described herein of the various blocks or routines of the flowcharts of **FIGS. 2 and 3** may be implemented in many ways, using any desired programming language or program design techniques, including, for example, sequential, procedural, or object-oriented programming or any combination thereof. Particular instructions, subroutines, or subprograms used to implement such functionality are known to those of ordinary skill in the art.

As shown in the example flow chart of **FIG. 2**, a routine 40 permits a user (*e.g.*, a contact-center administrator or supervisor) to access an intelligent-agent rule-configuration screen, such as by double-clicking an intelligent-agent icon in a window-based operating system or other graphical user interface, for example. The rule-configuration screen comprises a software interface which enables the user to configure various aspects of the intelligent agent, including the monitors, thresholds, actions to be taken, and monitoring schedule, as described in detail below.

First, a routine 42 permits the user to set a monitoring function to be performed by the intelligent agent within the contact center 10. More particularly, the routine 42 can provide the user with an interface with which to specify what parameter or parameters will be monitored by the intelligent agent. For example, the user can be presented with a drop-down menu or list of the various parameters that can be monitored. The intelligent agent can observe or track a parameter or statistic that is derived or calculated, whether by the intelligent agent platform 32 or by the CPU 16 of the multiport switch 12, as shown in **FIG. 1**. The intelligent agent can also track an absolute measurement (*e.g.*, time of day or number of calls received) or a predetermined point in time. Virtually any desirable parameter known to be of interest to those skilled in the art may be monitored. The particular parameters that may be available for monitoring will, of course depend upon the functional capabilities of the multiport switch 12 and the business objectives or strategic initiatives of the contact center 10. Just a few examples of such parameters are presented herein as exemplary illustrations.

The “service-level” of an agent group of the contact center 10, for example, can be monitored to ensure that customers of the contact center 10 are not waiting on-hold (in the telephony context) or are not left waiting for a reply message (in the e-mail context) for an unacceptably long period of time. The service level of a telephony agent group may be represented, for example, as a percentage of contacts processed by the agent group that do not involve a customer waiting on-hold at all, or do not involve a hold-time exceeding a predetermined maximum acceptable hold-time. For an e-mail agent group, service level may be represented as a percentage of e-mail contacts to which a reply is sent within a predetermined maximum acceptable response-time.

The intelligent agent also can be instructed to monitor a time limit, such as for moving contact-center agents from one agent group to another in anticipation of a one-time marketing or promotional campaign, for example, or to monitor for a particular time period during which a particular agent group may generally experience elevated or
5 reduced contact levels. Many other clock-based parameters can also be monitored by an intelligent agent in accordance with the principles of the present invention.

Other examples of parameters that the intelligent agent can monitor include the times when contacts occur, the number of agents assigned to a particular agent group, and the number of agents available to service the contact center (taking account of agents who
10 are unavailable due to illness, vacation, *etc.*).

As shown in **FIG. 2**, a routine 44 permits the user to select a threshold or limit value for the parameter or monitor selected via the routine 42. Once again, a menu-driven graphical interface can be provided by the routine 44, wherein the user is able to access a list of available threshold values corresponding to the selected parameter or
15 monitor using a drop-down list-box or other suitable software control. For example, if a clock-based parameter is selected via the routine 42, the routine 44 may permit the user to specify or choose time and/or date threshold values. Likewise, if service level is the selected parameter, the routine 44 may permit the user to select a percentage threshold value within an appropriate range. For example, a service level of 100% might be
20 unacceptably high because it would entail having agents sitting idle waiting for contacts from contact-center customers, whereas a service level of 50% would entail fully half of the customers of the contact center having to wait for service by contact-center agents. Thus, the appropriate range for the service-level threshold value in one exemplary

embodiment could be, for example, 80% - 90%. The routine 44 may also prompt the user to supply or select a comparative operator, such as less-than, less-than-or-equal-to, greater-than, or greater-than-or-equal-to, for example, to be used in performing a comparison between the selected monitor or parameter and the selected threshold value for the selected monitor or parameter. In other words, the intelligent agent can be configured to take a chosen action when the value of the selected monitor or parameter exceeds, or falls below, the selected threshold value, depending on which comparative operator is selected via the routine 44. The combination of the selected threshold value and the selected comparative operator is referred to herein as the "condition" or "comparison" performed by the intelligent agent in any particular instance.

Next, a routine 46 permits the user to select an action to be taken when the intelligent agent determines that the parameter selected via the routine 42 meets the condition selected via the routine 44. Here, too, the user may be presented with a finite list of choices or may be permitted to build a composite action sequence from predetermined or user-specified call-center functions. By way of example, where the intelligent agent is configured to monitor the service-level of a particular agent group with respect to a selected minimum acceptable threshold value, the action to be taken might be to move an agent from an agent group with excess agent capacity to the agent group having a service level that has been found to have fallen below the minimum acceptable service-level threshold value.

A routine 48 then permits the user to select a monitoring schedule for the intelligent agent, again using any suitable graphical or other interface. For example, a monitoring function may relate to a one-time occurrence, such as a special marketing or

promotional campaign for which a particular agent group might require a large number of agents for a period of time, or an ongoing requirement, such as maintaining an acceptable service-level for an agent group in accordance with operational requirements, business rules, or strategic initiatives of the contact center 10 (**FIG. 1**). In particular, the routine 5 48 may prompt the user to select whether the monitor selected via the routines 42, 44, and 46 is to be performed once or whether it is to be performed recurrently until the selected condition is met. For recurrent monitoring, the user may be further prompted to select or provide a time- and/or date-limit when the recurrent monitoring is to terminate, a frequency at which the monitoring is to be performed, and/or an absolute number of times 10 the monitoring is to be performed.

Once the intelligent agent is configured via the routines 42, 44, 46, and 48, the user may initiate operation of the intelligent agent via a routine 50, which may provide, for example, a “start” button or other suitable mechanism through which the user can transfer program control to the programming associated with the flowchart of **FIG. 3**.

15 **FIG. 3** is a flow chart illustrating an example of a routine 52 which performs the monitoring of at least one specified operational parameter of the contact center 10 (*e.g.*, as specified via the routine 42 as described above). This monitoring may be performed, for example, with respect to a value for the specified parameter that is calculated or derived by the intelligent agent within the intelligent agent platform 32, by the CPU 16 of 20 the multiport switch 12, by the multiport switch 12 itself, or by a value that is extracted from a data stream that the intelligent agent platform 32 receives from the CPU 16 of the multiport switch 12 via the data interface 18, as shown in **FIG. 1**.

As shown in **FIG. 3**, comparison is then performed by the block 54 between the specified operational parameter(s) and the specified corresponding threshold values to determine whether the specified conditions are met. If none of the conditions being monitored is met, control simply returns to the routine 52 to continue monitoring until the condition is met. If any of the conditions being monitored is met, control passes to a routine 56 described below. For one-time monitoring, the conditions being monitored typically will include a time-based condition (*i.e.*, a time limit), such that the monitoring will not continue indefinitely but rather will terminate (with respect to that particular monitor) when the time-based condition is met.

The routine 56 develops, based on the result of the comparison performed by the block 54, an indication of an action to be taken. The indication is based on whatever action was selected via the routine 46 as described above in connection with **FIG. 2**. The indication may include actually performing all or a portion of the specified action, where the action can be fully or partially automated, or may simply comprise, for example, a notification that is provided to the user or another administrator, supervisor, or agent of the contact-center 10 of what action is to be taken. Optionally, the reason why the action is required (*i.e.*, the condition that was determined to have been met) can also be made a part of the indication of the action to be taken. By way of example, actions that may be taken or indicated may include, among others, moving one or more agents from one agent group to another, shutting down a call trunk or, more generally, a contact transport mechanism, shutting down the entire contact center 10 (*e.g.*, for holidays), *etc.*

A block 58, as shown in **FIG. 3**, then determines whether an error condition exists as a result of the indication developed by the routine 56. An error condition is

generated, for example, if any portion of the specified action was supposed to be taken and was not taken. For example, if the action to be taken necessitates moving a contact-center agent from a first agent group to a second agent group, an error condition will occur if the first agent group does not have at least one qualified agent available that can be moved to fill this need. In the event that the block 58 determines that an error condition does exist, a routine 60 generates an entry in an error log maintained by the intelligent agent platform 32 (**FIG. 1**), and control then passes to a block 62. Of course, other available, relevant information (*e.g.*, date, time, reasons, agent group(s) or contact channel(s) affected, *etc.*) may also be included in the error log in addition to a description of the error itself. If the block 58 determines that no error condition exists, the routine 60 is bypassed, and control passes directly to the block 62. The block 62 determines whether the monitoring is scheduled to occur one time or recurrently (as described above with reference to the routine 48 of **FIG. 2**). If the monitor was scheduled to occur recurrently, control returns to the routine 52 to repeat the process of monitoring, performing the required comparison, and developing an indication of an action to be taken until the specified condition occurs. Otherwise, operation of the intelligent agent ends for the now-completed monitor(s). Or course, any number of monitors may be initiated concurrently, and when one monitor is completed, other monitors may continue to be performed on the intelligent agent platform 32.

The foregoing description is for the purpose of teaching those skilled in the art and is to be construed as illustrative only. Numerous modifications and alternative embodiments of the invention will be apparent to those skilled in the art in view of this description, and the details of the disclosed structure may be varied substantially without

Table 1. Demographic characteristics of the study population	
Age (years)	50.0 ± 10.0
Gender	
Male	50.0%
Female	50.0%
Education (years)	12.0 ± 2.0
Marital status	
Married	80.0%
Single	20.0%
Occupation	
Professional	30.0%
Managerial	20.0%
Technical	10.0%
Skilled	20.0%
Unskilled	20.0%
Income (USD/month)	1,500.0 ± 500.0
Health status	
Good	70.0%
Fair	20.0%
Poor	10.0%

CLAIMS

What is claimed is:

1. A method of allocating resources of a contact center comprising the steps of:
electronically monitoring at least one operational parameter of the contact center;
5 performing a comparison between the operational parameter and a threshold value
for the operational parameter; and
determining, based on the comparison, whether an action to be taken to affect
allocation of resources of the contact center is necessary.
2. The method of claim 1, wherein the resources of the contact center is
10 communication lines, agents, or communication trunks.
3. The method of claim 1, wherein at least one operational parameter is selected
from a group including service level, time of call occurrence, number of agents assigned
to an agent group, number of agents available to service the contact center, and time of a
one-time marketing/promotional campaign.
- 15 4. The method of claim 1, wherein the step of electronically monitoring, and the
step of performing a comparison employ a digital computer associated with the contact
center.
5. The method of claim 1, wherein the monitoring step is performed in real-time.
6. The method of claim 1, wherein the action to be taken tends to improve the
20 value of the operational parameter with respect to the threshold value.

7. The method of claim 1, wherein the monitoring step comprises the step of obtaining a sample value of the operational parameter.

8. The method of claim 1, wherein the monitoring, performing, and determining steps are performed repeatedly.

5 9. The method of claim 8, further comprising the step of acquiring a limitation to terminate the repeated performance of steps, and the step of terminating the repeated performance of steps in accordance with the acquired limitation.

10 10. The method of claim 1, further comprising the step of determining whether an error condition exists.

10 11. The method of claim 10, further comprising the step of indicating that an error condition exists.

12. The method of claim 1, further comprising the step of acquiring a threshold value for at least one parameter, and the step of acquiring an action to be taken.

15 13. The method of claim 1, further comprising the step of providing indication of an action to be taken.

14. The method of claim 13, further comprising the step of determining whether an error condition exists, and the step of indicating whether an error condition exists.

15. The method of claim 14, wherein the monitoring, performing a comparison, determining an action, providing indication of an action, determining whether an error

condition exists, and indicating whether an error condition exists steps are performed repeatedly.

16. The method of claim 15, further comprising the step of acquiring a limitation to terminate the repeated performance of steps.

5 17. The method of claim 16, further comprising the step of terminating the repeated performance of steps in accordance with the acquired limitation.

18. An apparatus for allocating resources of a contact center, comprising:
a processing unit coupled with a storage device;
a first set of instructions storable in the storage device and executable by the
10 processing unit for monitoring at least one operational parameter of the contact center;
a second set of instructions storable in the storage device and executable by the
processing unit for performing a comparison between the operational parameter and a
threshold value for the operational parameter; and
a third set of instructions storable in the storage device and executable by the
15 processing unit for determining whether an action to be taken to affect allocation of
resources of the contact center is necessary.

19. The apparatus of claim 18, wherein the resources of the contact center is communication lines, agents, or communication trunks.

20 20. The apparatus of claim 18, wherein the operational parameter is selected from a group including service level, time of call occurrence, number of agents assigned to an

agent group, number of agents available to service the contact center, and time of a one-time marketing/promotional campaign.

21. The apparatus of claim 18, wherein the first set of instructions provides for monitoring the operational parameter in real-time.

5 22. The apparatus of claim 18, wherein the action to be taken tends to improve the value of the operational parameter with respect to the threshold value.

23. The apparatus of claim 18, wherein the first set of instructions comprises instructions for obtaining a sample value of the operational parameter.

10 24. The apparatus of claim 18, wherein the first, second, and third sets of instructions are executed repeatedly.

25. The apparatus of claim 18, further comprising a set of instructions storable in the storage and executable by the processing unit for determining whether an error condition exists.

15 26. The apparatus of claim 25, further comprising a set of instructions storable in the storage and executable by the processing unit for indicating that an error condition exists.

20 27. The apparatus of claim 18, further comprising sets of instructions storable in the storage and executable by the processing unit for acquiring a threshold value for at least one parameter, for acquiring at least one parameter to be monitored, and for acquiring an action to be taken.

28. The apparatus of claim 18, further comprising a set of instructions storable in the storage and executable by the processing unit for providing indication of an action to be taken.

29. The apparatus of claim 28, further comprising sets of instructions storable in the storage and executable by the processing unit for determining whether an error condition exists, and for indicating whether an error condition exists.

30. The apparatus of claim 29, wherein the first, second, third, providing indication of an action to be taken, determining whether an error condition exists, and indicating whether an error condition exists instructions are executed repeatedly.

31. The apparatus of claim 30, further comprising sets of instructions storable in the storage and executable by the processing unit for acquiring a limitation to terminate the repeated performance of steps, and for terminating the repeated performance of steps in accordance with the acquired limitation.

32. An apparatus for allocating resources of a contact center, comprising:
means for monitoring at least one operational parameter of the contact center;
means for performing a comparison between the operational parameter and a threshold value for the operational parameter; and
means for determining whether an action to be taken to affect allocation of resources of the contact center is necessary.

33. The apparatus of claim 32, wherein the monitoring means provides for monitoring the operational parameter in real-time.

34. The apparatus of claim 32, further comprising means for providing an indication of an action to be taken.

35. The apparatus of claim 32, further comprising means for acquiring a threshold value for at least one parameter, means for acquiring at least one parameter to be
5 monitored, and means for acquiring an action to be taken based on the comparison.

36. The apparatus of claim 32, wherein the monitoring means comprises instructions for obtaining a sample value of the operational parameter.

37. The apparatus of claim 32, further comprising means for determining whether an error condition exists, and means for indicating whether an error condition exists.

007184-00EC038

ABSTRACT OF THE DISCLOSURE

Resources of a contact center are allocated by electronically monitoring at least one operational parameter of the contact center and performing a comparison between the operational parameter and a threshold value for the operational parameter. An indication of an action to be taken to affect allocation of resources of the contact center is then developed based on the comparison. This allocation also may be performed using an apparatus having a processing unit coupled with a memory, and instructions that are storable in the memory and executable by the processing unit. The instructions could be for monitoring at least one operational parameter of the contact center, performing a comparison between the operational parameter and a threshold value for the operational parameter, and developing an indication of an action to be taken to affect allocation of resources of the contact center.

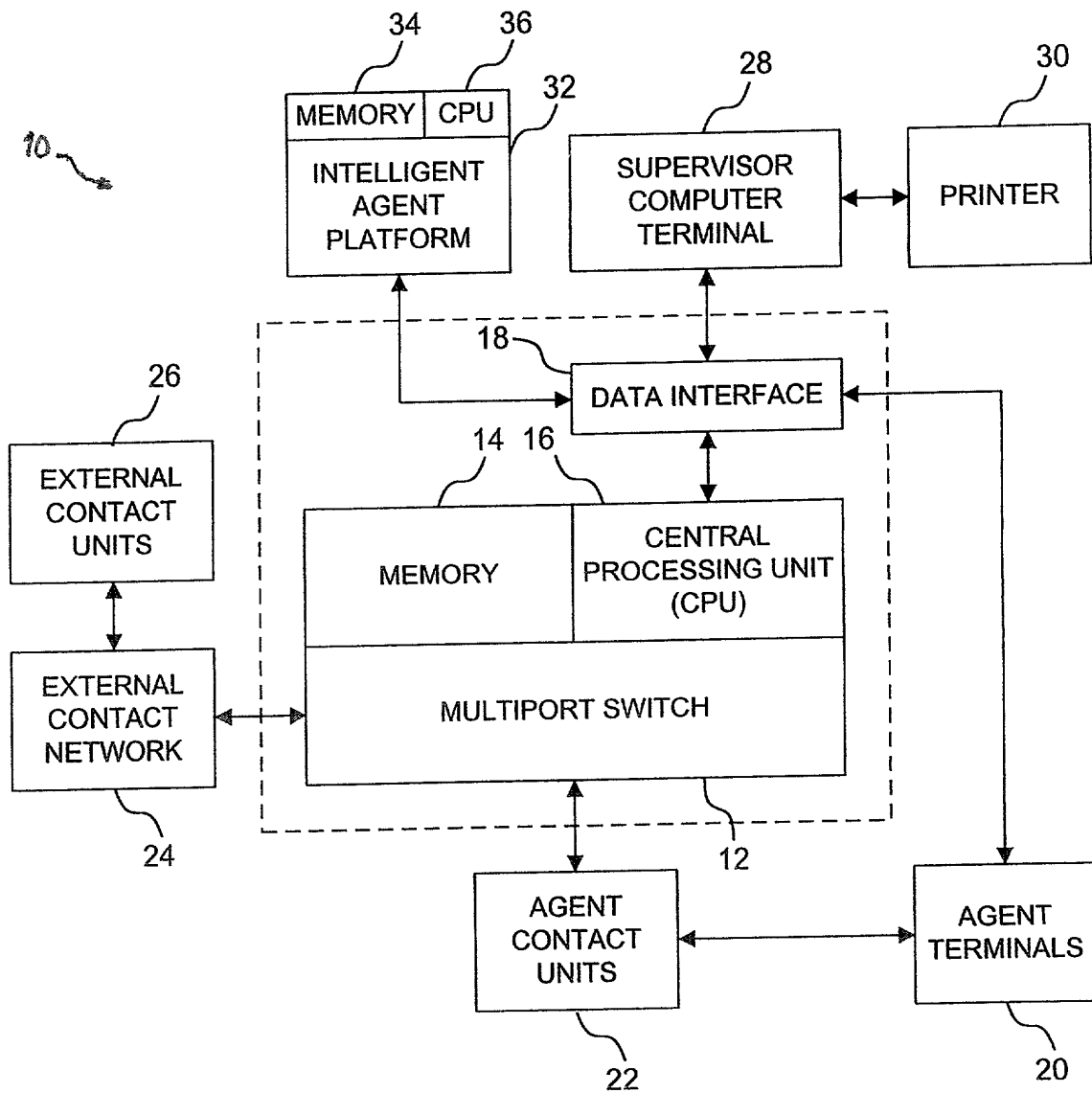


FIG. 1

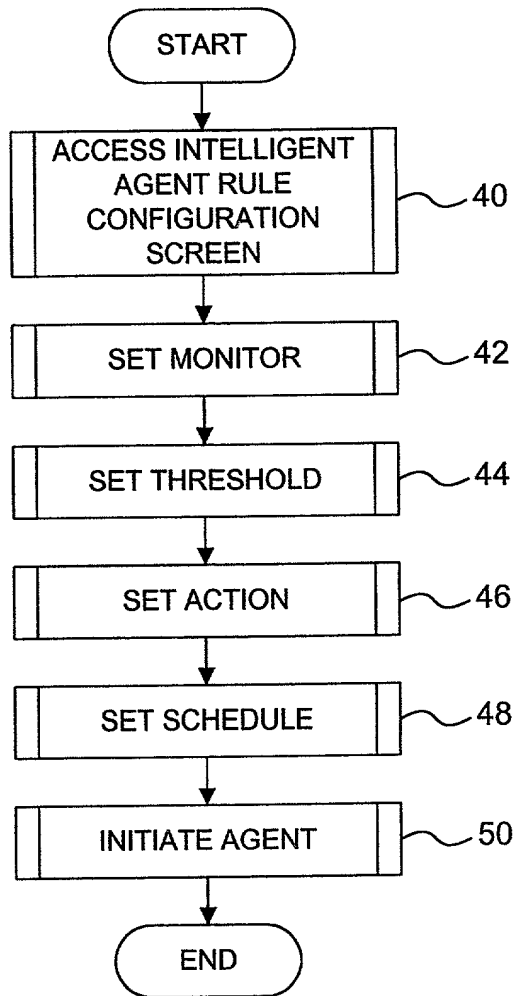


FIG. 2

Docket No.
6065/79184

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Method and Apparatus for Allocating Resources of a Contact Center

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as United States Application No. or PCT International Application Number _____ and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

(Number)

(Country)

(Day/Month/Year Filed)

☐

(Number)

(Country)

(Day/Month/Year Filed)

☐

(Number)

(Country)

(Day/Month/Year Filed)

☐

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

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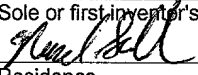
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